

Factors Influencing the Occurrence of Scabies to Students at Hidayatullah Islamic Boarding School Tanjung Morawa

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Abstract: Scabies is a skin disease caused by infestation and sensitization to the hominis variant *Sarcoptes scabiei* mite and its products. According to the Ministry of Health of the Republic of Indonesia, the prevalence of scabies in 2020 was 3.9%-6%. This states that Indonesia is still not free from scabies and is one of the infectious skin disease problems in Indonesia. The factors that cause the incidence of scabies to increase are high humidity, low sanitation, environmental density, poor personal hygiene, knowledge and attitudes and behaviors that are not supportive for a healthy lifestyle. The prevalence of scabies in Islamic boarding schools is still fairly high based on the results of the research conducted. This study aims to find out Factors Influencing the Occurrence of Scabies To students at Hidayatullah Islamic Boarding School Tanjung Morawa. *cross sectional* Observational analytics using a cross sectional design. Data were obtained through filling out questionnaires and physical examination of 94 samples then analyzed using univariate, bivariate analysis with the chi-square method and multivariate analysis will be carried out using multiple logistic regression tests to see the most dominant risk factors for *Sarcoptes scabiei* var infection. hominis. Data analysis using Chi Square showed that there was a relationship between Age and Personal hygiene Logistic regression analysis showed that the personal hygiene variable was the most dominant variable related to the event.

Keywords: Factor risk, *sarcoptes scabiei* varian hominis, skabies.

INTRODUCTION

Scabies is a skin disease caused by infestation and sensitization to the hominis variant *Sarcoptes scabiei* mite and its products. Synonyms or other words for scabies are scabies, gudig, budukan, and agogo itching. Scabies in humans can

cause itching, especially at night due to the body's allergic response to mites, especially on skin with thin stratum corneum.^{1,10}

Scabies are often ignored by the community because they are considered non-life-threatening, making sufferers not

motivated to go to health facilities. The most commonly affected location is on thin and moist parts of the skin such as between the fingers, between the toes, wrists, back and groin.² The transmission of scabies can be caused directly (contact with the sufferer) or indirectly with the sufferer through the use of tools and materials together with the sufferer of scabies.^{3,9}

The occurrence of scabies is often found in dense environments, slums, and environments with a lack of cleanliness.¹² *Sarcoptes scabiei* In general, Islamic boarding schools have a dense environment and the cleanliness of each individual is poor for students, for example, rarely drying or cleaning beds, changing pillowcases and bed sheets. This makes it easy to infect the *Sarcoptes scabiei* mite.⁴ The medical therapy used for scabies is an antiparasitic and holistic medical approach which means not only treating the patient's clinical complaints but also avoiding external and internal risks.^{2,20}

The prevalence of scabies according to the World Health Organization (WHO) in 2020 states that in general the incidence of scabies can infect at least 200 million people at any given time.⁵ According to the Ministry of Health of the Republic of Indonesia, the prevalence of scabies in 2020 was 3.9%-6%. This states that Indonesia is still not free from scabies and is one of the infectious skin disease problems in Indonesia.⁶ The factors that cause the incidence of scabies to increase are high humidity, low sanitation, environmental density, poor personal

hygiene, knowledge and attitudes and behaviors that are not supportive for a healthy lifestyle.^{7,9}

The prevalence of scabies in Islamic Boarding Schools is still fairly high based on the results of research conducted at the An-Nach Islamic Boarding School in Magelang at 43%, at the Bahroniyyah Ngemplak Demak Islamic Boarding School at 36.3% and at one of the Islamic Boarding Schools in East Jakarta at 51.6%.⁸ Based on the results of a preliminary survey at the Hidayatullah Tanjung Morawa Islamic Boarding School conducted by researchers, there were still several students who were affected by scabies and it was also found that the causative factor was poor hygiene. As researched by Faidah, D and Saputro R (2022) on the research on the Overview of Personal Hygiene of Students on the Incidence of Scabies at the Raudlatul Mubtadin Islamic Boarding School, Kubang Village, Wanayasa District, Banjarnegara Regency in 2021, it was found that students affected by scabies had a low proportion of personal hygiene of 60.2%.⁵

From the description above, it is proven that scabies is one of the skin diseases that are still often found in developing countries because the incidence rate is still high and supported by risk factors such as environmental density and hygiene of each individual, making researchers interested in conducting research on Factors Affecting the Incidence of Scabies in students at the Hidayatullah Tanjung Morawa Islamic Boarding School

The purpose of this study is to find out the factors that affect the incidence of scabies, the incidence of scabies based on age and sex and to find out the most dominant risk factors for scabies infection at the Hidayatullah Tanjung Morawa Islamic Boarding School.

METHOD

This study is an analytical descriptive research with a cross-sectional design. This research was conducted in February 2023 at the Hidayatullah Islamic Boarding School Tanjung Morawa. The sample in this study is students in grades 7, 8 and 9 at the Hidayatullah Tanjung Morawa Islamic Boarding School with sampling using total sampling based on inclusion criteria, namely respondents who have submitted back the inform concent sheet and the questionnaire is filled out completely.

The data of this study was analyzed using univariate analysis to display the incidence of *Sarcoptes scabiei* var infection. hominis and describe risk factors. Bivariate analysis uses the Chi-square test to analyze the relationship between risk factors and the proportion of *Sarcoptes scabiei* infection. If the Chi-square test is not eligible, it will be tested with an alternative test, namely the Fisher's test and the Mann-Whitney test. And multivariate analysis used multiple logistic regression tests to look at the most dominant risk factors for *Sarcoptes scabiei* var infection. hominis at the Hidayatullah Islamic Boarding School, Tanjung Morawa.

RESULT

Univariate Analysis

Table 1. Sociodemographic Characteristics of Respondents

Research Sample Data (n = 94)	Frequency (n)	Percentage (%)
Gender		
Man	49	52.1
Woman	45	47.9
Total	94	100
Age		
<15 y.o	62	66
≥15 y.o	32	34
Total	94	100

The majority of the subjects in this study were male students, namely 49 students (52.1%), and 45 other students (47.9%) were female.

Then sociodemographics based on age, the majority are students aged <15 years, namely 62 students (66%), while 32 students (34%) are ≥15 years old.

Table 2. Frequency distribution based on Personal Hygiene.

Personal Hygiene	Frequency	Percentage (%)
Good	63	67
Poor	31	33
Total	94	100

Based on the table above, it can be seen that of the 94 students, 63 students (67%) have good personal hygiene, and 31 students (33%) have poor personal hygiene

Table 3. Frequency distribution by Physical Environment

Physical Environment	Frequency	Percentage (%)
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Physical Environment	Frequency	Percentage (%)
Good	84	89.4
Poor	10	10.6
Total	94	100

Based on the table above, it can be seen that of the 94 students, 84 students (89.4%) have a good physical environment, and 10 other students (10.6%) have a bad physical environment.

Table 4. Distribution of frequency is based on the number of scabies incidence

Event Skabies	Frequency	Percentage
Uninfected	57	60.6
infected	37	39.4
Total	94	100

Based on the table above, it is known that of the 94 students, there are 57 students (60.6%) who are not infected with scabies, and 37 other students (39.4%) are infected with scabies.

Bivariate Analysis

Bivariate analysis uses the Chi-square test to analyze the relationship between risk factors and the proportion of *Sarcoptes scabiei* infection. If the Chi-square test is not eligible, it will be tested with an alternative test, namely the Fisher's test and the Mann-Whitney test.

Table 5. Incidence of scabies by gender

Gender		Skabies		Total	P-Value
		Non Infected	Infected		
Man	N	30	19	49	0.903
	%	61.2%	38.8%	100%	
Woman	N	27	18	45	
	%	60.0%	40.0%	100%	

Gender	Skabies		Total	P-Value
	Non Infected	Infected		
N	57	37	94	
%	60.6%	39.4%	100%	

Table 7. The relationship between personal hygiene and the incidence of scabies

Persona / Hygiene	Skabies		Odds Ratio	P-Value
	Non Infected	Infected		
Clothing Hygiene, n (%)				
Good	51 (64.6%)	28 (35.4%)	2.73	0.07
Poor	6 (40%)	9 (60%)	2	4
Towel Hygiene, n (%)				
Good	51 (68.9%)	23 (31.1%)	5.17	0.00
Poor	6 (30%)	14 (70%)	4	2
Mattress and Bed Sheet Hygiene, n (%)				
Good	39 (72.2%)	15 (27.8%)	3.17	0.00
Poor	18 (45%)	22 (55%)	8	8

Based on the data presented with the cross tabulation above, it shows that students whose clothes are clean are dominated by 64.6% of students who are not infected with scabies, while students whose clothes are poorly cleaned are dominated by 60% of students who are infected with scabies. Then the results of the chi-square test obtained a significance value (p-value) of 0.074 (>0.05), so it can be stated that the scarcity of clothes is not related to the incidence of scabies.

Students whose towels are shab are dominated by 68.9% of students who are not infected with scabies, while students

whose towel hygiene is poor are dominated by 70% of students who are infected with scabies.

The results of the chi-square test obtained a significance value (p-value) of 0.002 (<0.05), so it can be stated that the cleanliness of the towel is related to the incidence of scabies

Students whose mattresses and bed sheets are clean are dominated by 72.2% of students who are not infected with scabies, while students whose mattress and bed sheets are poor are dominated by 55% of students who are infected with scabies. Then the results of the chi-square test obtained a significance value (p-value) of 0.008 (<0.05), so that it can be stated that the cleanliness of mattresses and bed sheets is related to the incidence of scabies.

Table 8. The difference between the physical environment and the scabies

Physical Environment	Scabies		Odds Ratio	P-Value
	Non Infected	Infected		
Sunlight, n (%)				
Good	51 (63%)	30 (37%)	1.983	0.250
Poor	6 (46.2%)	7 (53.8%)		
Water Availability, n (%)				
Good	51 (63.8%)	29 (36.3%)	2.345	0.140
	6 (42.9%)	8 (57.1%)		

Based on the data presented with the cross-tabulation above, it shows that students who get good sunlight are dominated by 63% of students who are not infected with

scabies, while students who get bad sunlight are dominated by 53.8% of students who are infected with scabies. Then the results of the chi-square test obtained a significance value (p-value) of 0.250 (>0.05), so it can be stated that sunlight is not related to the occurrence of scabies.

Students whose water availability is good are dominated by 63.8% of students who are not infected with scabies, while students whose water availability is poor are dominated by 57.1% of students who are infected with scabies. Then the results of the chi-square test obtained a significance value (p-value) of 0.140 (>0.05), so that it can be stated that water availability is related to the occurrence of scabies.

Multivariate Analysis

Multivariate analysis in this study used multiple logistic regression tests to see the most dominant risk factors for *Sarcoptes scabiei* var *hominis* at Hidayatullah Islamic Boarding School, Tanjung Morawa.

Table 9. The results of multivariate analysis used multiple logistic regression tests.

	Variabel	B	Wald	Sig.	Exp(B)
Step 1^a	Age	-	4.758	0.029	0.284
		1.260			
	Gender	0.367	0.543	0.461	1.444
	Personal Hygiene	1.778	12.416	0.000	5.920
	Constant	-	1.705	0.192	0.152
		1.886			

DISCUSSION

Incidence of Scabies by Age and Gender

The results of the research that have been carried out show that there is a relationship between the age variable and the incidence of scabies in students at the Hidayatullah Tanjung Morawa Islamic Boarding School. This is in line with the research conducted by Avidah A, et al. (2019) on students in Risk Factors for Scabies at Modern Conventional Islamic Boarding Schools which showed that from 190 samples, the results of the age were 5.5 times increased the risk of scabies.⁸

On the psychological or mental aspect, a person's level of thinking is getting more mature and mature. So the older the individual, the more experience and insight they have. A person with a previous history of scabies will know the causes, how to treat it, and how to prevent it.^{8,13}

A type of kelm is the difference between males and females biologically from the time an individual is born. Gender is grouped into two, namely male and female. From the results of the study conducted using the chi-square test, a significance value (p-value) of 0.903 (>0.05) was obtained, so it can be stated that there is no relationship between sex and the incidence of scabies.

The Relationship Between *Personal Hygiene* and the Incidence of Scabies

The results of the research that have been carried out show that there is a relationship between personal hygiene and the incidence of scabies in students at the

Hidayatullah Tanjung Morawa Islamic Boarding School. This is evidenced by testing using logistic regression analysis which obtained a significance number (p-value) of 0.000 ($p < 0.05$). Then from the three indicators that measure personal hygiene, it was found that the scarcity of towels had the most effect on the incidence of scabies.

Previous research conducted by Faidah, D and Saputro R (2022) on students at the Raudlatul Muhtadin Islamic Boarding School, Kubang Kecamatan Wanayasa Village, Banjarnegara Regency, stated that students affected by scabies had a low proportion of personal hygiene of 60.2%.¹

Based on this study, it was obtained that factors that play a very important role in the onset of scabies disease, namely personal hygiene, especially the hygiene factor of towels which has the most dominant influence.

The results of the study showed that students who still had poor personal hygiene along with borrowing clothes from friends and soaking clothes were united with other friends' clothes. It is recommended for students to wear personal clothes and not to borrow clothes from other friends, wash clothes with detergent, do not soak clothes by combining them with other friends' clothes and if drying clothes that have been washed under the hot sun.

The Relationship Between the Physical Environment and the Occurrence of Scabies

The results of the research that have been carried out show that there is no relationship between the physical environment and the incidence of scabies in students at the Hidayatullah Tanjung Morawa Islamic Boarding School. This is in line with research conducted by Fitria N, et al (2020) which stated that the relationship between environmental sanitation and individual hygiene with complaints of scabies disease in children at the Amaliyah Orphanage, Kendari City in 2019 found that there was no relationship between the availability of water facilities and scabies.¹⁶

The physical environment is everything that is around a lifeless human being. Includes the availability of clean and sufficient water for solar needs and lighting.¹⁵

Based on the results of observations, it shows that the availability of clean water at the Hidayatullah Tanjung Morawa Islamic Boarding School has met the standards of health requirements. However, for the needs of students to use water to wash clothes and bathe, it is still lacking because from interviews conducted by researchers, many students use excess water so that not all students get enough water to wash clothes and bathe. If all students get clean water facilities and water needs are met for bathing and washing clothes, there will be a decrease in the incidence of scabies due to the *Sarcoptes scabiei* var mites. Hominis.^{14,17}

Ventilation and windows which are sources of sunlight are factors that affect the occurrence of scabies. This is due to the *Sarcoptes scabiei* var mite. Hominins

can live up to 19 days outside the skin if they are indoors with high humidity. In addition, the higher the indoor air humidity, the longer the *Sarcoptes scabiei* var mites will be. Hominins live and are capable of infecting humans. If this happens in a dense environment, it will have an impact on the number of people infected with scabies.¹⁸

A healthy room is one that gets enough sunlight, not less and not too much.¹⁹

Based on the results of observations, it shows that the solar lighting that enters through windows and doors on students at the Hidayatullah Tanjung Morawa Islamic Boarding School meets the standard health requirements.

Each student gets enough sunlight because the students open the windows and doors and feel the fresh air every morning. The results obtained were that there was no relationship between the physical environment of sunlight and the incidence of scabies in students at the Hidayatullah Tanjung Morawa Islamic Boarding School

CONCLUSION

Based on the results of this study, there are 38.8% of male students infected with scabies, while 40% of female students are infected with scabies. Based on age, 48.4% of students aged <15 years were infected with scabies, while 21.9% of ≥15-year-old students were infected with scabies.

Based on the research, it can also be concluded that there is a relationship between personal hygiene and physical environment and the incidence of scabies

in students at the Hidayatullah Tanjung Morawa Islamic Boarding School.

The most dominant risk factor for the incidence of scabies in students at the Hidayatullah Tanjung Morawa Islamic Boarding School is the personal hygiene factor.

SUGGESTION

Based on the conclusion of the results of this study, there are several suggestions proposed, including the following:

1. The results of this research are expected to be a very meaningful reference for the institution of the Faculty of Medicine, University of Muhammadiyah North Sumatra for the benefit of further research.
2. In the next study, it is hoped that it can add other factors that can affect the number of scabies cases.
3. For the Islamic boarding school to be able to try to reduce the incidence of scabies by holding counseling and providing access to health services properly. In addition, it can prepare a community service work schedule to clean the pesantren environment and there are examples from seniors to behave in a clean and healthy life

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